8:00 – 8:55  Coffee, juice, and pastries

8:55 – 9:00  Opening Remarks – Patricia L. Clark

Opening Plenary Speaker

9:00 – 9:30  Probing the effect of the ribosome on the protein folding pathway using single-molecule chemo-mechanical folding
Emily Guinn\textsuperscript{1,2} & Susan Marqusee\textsuperscript{3}
\textsuperscript{1}California Institute for Quantitative Biosciences, UC-Berkeley
\textsuperscript{2}Department of Chemistry and Biochemistry, DePauw University

Proteins in the Cell
Chair: TBA

9:30 – 9:50  Stress-induced molecular chaperone production depends on adaptive intracellular pH change
Catherine G. Triandafillou\textsuperscript{1}, Aaron R. Dinner\textsuperscript{2}, D. Allan Drummond\textsuperscript{3}
\textsuperscript{1}Biophysical Sciences Graduate Program, \textsuperscript{2}James Franck Institute, \textsuperscript{3}Department of Biochemistry and Molecular Biology, The University of Chicago

9:50 – 10:10  Conformational dynamics of Pseudomonas aeruginosa penicillin binding protein 4
Neha Rana & Shahriar Mobashery
Department of Chemistry & Biochemistry, University of Notre Dame, Notre Dame, IN 46556

10:10 – 10:30  Measuring and modulating the extent of polypeptide disorder
Micayla A. Bowman\textsuperscript{1}, Josh A. Riback\textsuperscript{2}, Adam M. Zmyslowski\textsuperscript{4}, Tobin R. Sosnick\textsuperscript{3,4} & Patricia L. Clark\textsuperscript{1}
\textsuperscript{1}Department of Chemistry & Biochemistry University of Notre Dame, Notre Dame, IN; \textsuperscript{2}Institute for Biophysical Dynamics, \textsuperscript{3}Department of Chemistry, \textsuperscript{4}Department of Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL 60637, USA

10:30 – 10:50  Coffee Break
**Protein Conformational Changes & Binding**

*Chair: TBA*

10:50 – 11:10 *Unbiased Molecular Dynamics of 11 minute Timescale Drug Unbinding Reveals Transition State Stabilizing Interactions*

**Samuel Lotz, Alex Dickson**  
Department of Biochemistry and Molecular Biology, Michigan State University, East Lansing, MI

11:10 – 11:30 *Structural insight into Neisseria meningitidis lactoferrin binding protein B’s interaction with human lactoferrin*

**Ravi Yadav**, **Srinivas Govindan**, **Tommi White**, **Srinivas Chakravarthy**, **Jia Ma**, **Nicholas Noinaj**  
1^Purdue University Interdisciplinary Life science, 2^Department of Biological Sciences, 3^Department of Biomedical Engineering, Purdue University, West Lafayette, IN, 4^Department of Biochemistry, University of Missouri, Columbia, MO, 5^BIO-CAT, Illinois Institute of Technology, Sector 18ID, Advanced Photon Source, Argonne National Laboratory, Lemont, IL, 6^Biophysical Analysis Laboratory, Bindley Bioscience Center, Purdue University, West Lafayette, IN, 7^Purdue Institute for Inflammation, Immunology and Infectious Disease, Purdue University, West Lafayette, IN

11:30 – 11:50 *A new protein conformational switch using human Cellular Retinol Binding Protein II as a template*

**Alireza Ghanbarpour, Zahra Assar, Elizabeth Santos, Meisam Nosrati, Babak Borhan, James H. Geiger**  
Department of Chemistry, Michigan State University, East Lansing, MI

11:50 – 1:15  **Lunch**

1:15 – 2:40  **Poster Session**

**Proteins and Membranes**

*Chair: TBA*

2:40 – 3:00 *Towards high resolution structure prediction of beta-barrel membrane proteins*

**Wei Tian, Meishan Lin, Hammad Naveed, Jie Liang**  
Department of Bioengineering, University of Illinois at Chicago, Chicago, IL

3:00 – 3:20 *Role of Packing Defects in the Stability and Function of a Helical-bundle Membrane-bound Enzyme*

**Ruiqiong Guo**, **Seung-Gu Kang**, **Zixuan Cang**, **Erin Deans**, **Guowei Wei** and **Heedeok Hong**  
†Department of Chemistry, 1Department of Biochemistry & Molecular Biology and §Department of Mathematics, Michigan State University, East Lansing, MI  
‡Computational Biology Center, IBM Thomas J. Watson Research Center, Yorktown Heights, NY  
¶Department of Chemistry, Brandeis University, Waltham, MA
Experiment and simulations find that partially disordered KcsA monomers fold and bind within the bilayer to form tetramers not withstanding off-pathway misfolded species

Kevin C. Song\textsuperscript{1}, Eduardo Perozo\textsuperscript{1,2,3}, Benoît Roux\textsuperscript{1,2,3,4}, Tobin R. Sosnick\textsuperscript{1,2,3}

\textsuperscript{1}Graduate Program in the Biophysical Sciences, \textsuperscript{2}Institute for Biophysical Dynamics, \textsuperscript{3}Department of Biochemistry and Molecular Biology, \textsuperscript{4}Department of Chemistry, The University of Chicago, Chicago, IL

Coffee Break

Protein Aggregation

Chair: TBA

4:00 – 4:20  
\textit{A Multi-Scale Study of Amyloid Wild-Types and Mutants: Monomers, Oligomers, Fibrils}

Arthur O. Vale\textsuperscript{1}, Jacob Usadi\textsuperscript{1}, Sachin R. Natesh\textsuperscript{1}, Sarida Pratuangtham\textsuperscript{2}, Karl F. Freed\textsuperscript{1}, Esmael J. Haddadian\textsuperscript{4}

\textsuperscript{1}Physical Sciences Collegiate Division, \textsuperscript{2}Department of Chemistry and James Frank Institute, \textsuperscript{4}Biological Sciences Collegiate Division, University of Chicago, Chicago, IL

4:20 – 4:40  
\textit{Fast relaxation imaging of protein structure, stability, and folding in biomaterial environments with variable crowding}

Jay M. Pittman, Atul K Srivastava, Christopher T. Boughter, Bharat Somireddy Venkata, Joseph R. Sachleben and Stephen C. Meredith

Department of Pathology, University of Chicago, Chicago, IL

Closing Plenary Speaker

4:40 – 5:10  
\textit{Role of topological defects in membrane protein homeostasis}

Francis Roushar,\textsuperscript{1} Timothy Gruenhagan,\textsuperscript{1} Wesley D. Penn,\textsuperscript{1} Beata Jastrzebska,\textsuperscript{2} and Jonathan P. Schlebach\textsuperscript{1}

\textsuperscript{1}Department of Chemistry, Indiana University, Bloomington, Indiana USA 47405
\textsuperscript{2}Department of Pharmacology, Case Western Reserve University, Cleveland, Ohio 44106

5:10 – 5:15  
\textit{Closing Remarks – Connie Jeffrey}

5:15 – 6:30  
\textit{Closing Reception}